The NDEP has reviewed NRRGs response to the previous review and they are incorporated into the attachment. The NDEP provides response in the boxed text below the response.

1) General Comments ~ All Volumes

NDEP COMMENT

1-1 There are references to multiple landfill cover designs in the Application and on the detail sheets; NRRG should propose or clarify that only a single landfill design is being submitted. Please revise the multiple references to refer to a single design, this will improve Division review and lend specificity to comments. Provide all supporting data inclusive of all engineering properties; inputs used to for the design (modeling, structural components etc.); a description of the software programs used (version #) and any assumptions with complete output files should also be included as supporting data. Throughout the text various sections refer to other sections that refer to the aforementioned section, please provide as much continuity to the Application as is possible.

SECOR RESPONSE

The cover design proposed by NRRG is a prescriptive cover design that includes a method to drain infiltration prior to contacting the waste as well as providing gas venting. The term "prescriptive cover with drainage layer" has been used consistently throughout the application to describe the cap and liner systems.

In terms of your request for supporting data, a table listing all software programs and the version used located is included in Appendix B of Volume II. All model input and output is also contained in Appendix B of Volume II.

NDEP Response Comment

1) *The NDEP has no further comment*

NDEP COMMENT

1-2 There are multiple references (and requirements) to Inspections (daily cover, truck inspections, training requirements, monitoring etc), please include each required inspection as an Inspection checklist (active operations, monitoring, closure/post-closure activities etc.), including sign up sheets as documentation of training.

SECOR RESPONSE

Appropriate checklists are provided in Appendix E of Volume I: Plan of Operations; and Appendix J of Volume II: Report of Design. Specifically, these checklists include:

Volume I:

- *Checklist for Primary Load Checking, Secondary Load Checking, and Random Inspection (Section 4.2)*
- *Employee Training Record, specifying all required training, date completed (Section 4.3)*
- *Checklist for Cover of Compacted Solid Waste (Section 9)*
- *Checklist for Routine Visual Inspection of Cover Material (Section 9)*
- *Checklist for Daily Inspection for Litter, Scattered Paper, and Other Lightweight Debris (Section 16)*

Volume II:

- *Checklist for Routine Visual Inspection of Cover During Closure and Post-Closure Period (Section 5.13.2)*
- *Checklist for Routine Visual Inspection of Diversion Structure During Operations, Closure, and Post-Closure Period (Section 5.13.2).*

NDEP Response Comment

2) *The NDEP has no further comment, some portion of these will be captured in the compliance schedule for the permit*

NDEP COMMENT

1-3 There are also references in the Closure/Post Closure Plan of the potential for insufficient cover to fully close the site as proposed. In the submission of the material balance for the site, please include an evaluation of the wind/water/erosion potential of the final cap and include this in the necessary calculation for sufficient soils to operate the site and proceed to closure through the 30-year post-closure period. NRRG should note the permitted capacity of the site may be controlled by the availability of soils to operate, complete closure and conduct post closure activities. For each of the borrow source areas please identify each (table?) and the respective volumes available, this has further comment below.

SECOR RESPONSE

Table 9 in Section 5.9.3 of Volume II provides a complete listing of materials <u>available</u> for the landfill life through closure. A discussion of material <u>required</u> for landfill life through closure is provided in Section 5.9.4 of Volume II, and Table 10 in Section 5.9.4 provides a list of material requirements and locations. In addition, calculations have been included in Section 5.9.5 of Volume II on material balances and potential for loss of soil using the Revised Universal Soil Loss Equation 2 (RUSLE2) model (see Appendix E of Volume II for RUSLE2 input and output)). A complete soil balance calculation has been made. Closure and Post-Closure requirements are thoroughly discussed in Sections 5.12 and 5.13 of Volume II, Report of Design.

NDEP Response Comment

3) *The NDEP has no further comment*

NDEP COMMENT

1-4 Please assure that all narrative in the text is consistent with the supplied detail sheets and their respective diagrams, proposed/final elevations, cross sections, environmental system locations and final details. Conversely, please assure that all information on the sheets is included in the text. With respect to the Response please incorporate these pages into the Application and note where they were inserted as a portion of your response to this technical review.

SECOR RESPONSE

The reports have been reviewed for inconsistencies in the narrative as well as in the detail sheets.

NDEP Response Comment

4) *The NDEP has no further comment*

NDEP COMMENT

1-5 The Division suggests the following structural changes to the layout (sequential structure) of the Application:

NDEP COMMENT

1-5.1 Remove the Closure/Post Closure Plan as an appendix, and place within the Operations Plan

SECOR RESPONSE

The Closure/Post Closure Plan has been removed as an appendix, and is now contained in Sections 5.12 and 5.13 in Volume II: Report of Design. SECOR has placed the Closure/Post Closure Plan documentation in the Report of Design rather than Volume I: Plan of Operations, as it is more engineering design than an operational plan. A summary of the plan and reference to the Report of Design is included in the Plan of Operations.

NDEP Response Comment

5) *The NDEP has no further comment*

NDEP COMMENT

1-5.2 Include sample calculations, at least one (1) as supporting data as an appendix for any/all engineering criteria

SECOR RESPONSE

All engineering calculations are referenced at the source and SECOR has provided methods and backup calculations for all engineering design work when appropriate in the Appendices of the Report of Design.

NDEP Response Comment

6) *The NDEP has no further comment*

NDEP COMMENT

1-5.3 Provide the Request for Suspension from Groundwater Monitoring as a stand-alone volume with the Gas Analysis, or liquids evaluation (HELP model). Include only the regulatory requirements and do not include material that crosses over to the Active/Closure/Post-Closure Operations of the site.

SECOR RESPONSE

The Request for Suspension from Groundwater Monitoring is now a stand-alone document. Please refer to Sections 6.2.1.7 through 6.2.1.13 for the HELP modeling discussion in reference to leachate evaluation. Section 7.0 provides an evaluation of gas migration to groundwater.

NDEP Response Comment

7) *The NDEP has no further comment*

NDEP COMMENT

1-6 Please note the site may no longer be subject to mining regulations, but will likely be subject to substantial OSHA requirements. Prior to issuing a Permit to operate, the Division will request that state OSHA inspect the site and submit a report to the Division.

SECOR RESPONSE

NRRG appreciates NDEP's concerns regarding health and safety, and will work closely with OSHA to address any concerns that might arise as a result of an inspection of the site. In addition, a preliminary health and safety plan has been added to the Plan of Operations (see Sections 18.7, 18.8 and 18.9) addressing health and safety planning and NRRG's commitment to provide for employee health and safety.

NDEP Response Comment

8) *The NDEP will include a permit condition for the submission of plans that may be submitted and reviwed subsequent to permit issuance, otherwise the NDEP has no further comment at this time.*

NDEP COMMENT

1-7 Closure/Post-Closure – This is being reserved for comment upon receipt of a response

SECOR RESPONSE

A comprehensive Closure/Post Closure Plan is provided in Sections 5.12 and 5.13 of the Report of Design.

NDEP Response Comment

9) *The NDEP has no further comment*

NDEP COMMENT

1-8 Financial Assurance - This is being reserved for comment upon receipt of a response

SECOR RESPONSE

NRRG has committed to providing financial assurance in compliance with NAC 444.685 and it is included in Section 5.13.6 of Volume II, Report of Design, and Appendix K.

NDEP Response Comment

10) *The NDEP has no further comment*

NDEP COMMENT

1-9 Storm Water Review - This is being reserved for comment upon receipt of a response

SECOR RESPONSE

A system of settling ponds has been included in Volume II: Report of Design to contain sediments deriving from run-off. These ponds have been sized based on calculations of run-off volume and sediment potential. A complete discussion of run-on controls is contained in Section 5.14.3.1 of Volume II; run-off controls are addressed separately in Section 5.14.3.2, specifically run-off controls during filling, and Section 5.14.3.3, run-off controls at closure.

NDEP Response Comment

11) *The NDEP has no further comment*

2) Comment - Structural Review

NDEP COMMENT

2-1 The Division has some concerns with respect to the risers that will be, at closure, some 1000 feet tall and will have stood for some 80 years with considerable susceptibility to movement, operational damage and possible failure over the long term. Please submit a maintenance plan for these inclusive of a survey program and a corrective measures response to affirm the location and operational capability of the risers is maintained throughout the life of the landfill.

SECOR RESPONSE

Section 5.7, Volume II: Report of Design, is devoted to landfill gas and leachate management systems, specifically sump design (including vertical riser pipe design and analysis). A maintenance plan has been prepared for the vertical riser pipes and is presented in Appendix F of the Report of Design.

NDEP COMMENT
Please include the following with respect to these risers:

NDEP COMMENT
2-1.1 A grading and drainage plan for each of the contributing areas served by the risers.

SECOR RESPONSE
Sheet 5, Pit Bottom Grading Plan, shows expanded detail of the grading and drainage to the sumps in the bottom of each of the three pits. Section 5.7.1.1 (Sumps Located Below the Crest of the Pits) provides detail of grading and drainage.

NDEP Response Comment

12) *The NDEP has no further comment.*

NDEP COMMENT
2-1.2 Engineered Sump Design Details

SECOR RESPONSE
Sump design details are fully discussed in Section 5.7.1, Volume II, Report of Design.

NDEP Response Comment

13) *See above*

NDEP COMMENT
2-1.3.1 Connection design details for the risers and landfill gas collection (horizontal) pipelines.

SECOR RESPONSE
For connection design details, please refer to Sheet 18 – Detail 3 (Vertical Riser Pipes – Telescopic Joint Detail), and Detail 4 (Horizontal Gas Collection Pipes to Vertical Riser Pipe Connection Detail Located at Intermediate Cover Layer).

NDEP Response Comment

14) *The NDEP has no further comment*

NDEP COMMENT
2-1.3.2 Include a deformation and stability analysis for the horizontal piping capturing the 500-foot overburden for the above grade portion.

SECOR RESONSE
Refer to Volume II: Report of Design, Section 5.7.5, Horizontal Gas Collection Pipes Below the Intermediate Cover/Liner Material.

NDEP Response Comment

15) *The NDEP has no further comment*

NDEP COMMENT
2-1.4 Design detail for the bearing capacity of the risers support; please include connection details, concrete pad design and bearing pressure calculations of the pad and sump combination.

SECOR RESPONSE
Bearing capacity of the risers has been fully reviewed and is discussed in Section 5.7.2.2, Volume II: Report of Design. Calculations were performed and are included in the Appendix G. Connection design details can be viewed on Sheet 5, Details 3, 4, and 5.

NDEP Response Comment

16) *The NDEP has no further comment*

NDEP COMMENT

2-1.5 Incorporate the Seismic Impact Zone criteria showing this has been incorporated into the design.

SECOR RESPONSE
Section 5.7.2.3 of Volume II: Report of Design addresses movement and stresses due to earthquake forces on the vertical riser pipes. PROSHAKE version 1.12 was used to perform the analyses

NDEP Response Comment

17) *The NDEP has no further comment*

NDEP COMMENT

2-1.6 As the Risers also act as a Gas Collection, how was the separation of the risers arrived at in the lower portion of the landfill (see below).

SECOR RESPONSE
The separation of the risers was done empirically. Only one riser is required.

NDEP Response Comment

18) *The NDEP has no further comment*

3) Comment - Run-on/off

NDEP COMMENT

3-1 Identify all the contributing watersheds and the serviced reaches on one plan sheet either at build out of the landfill or on the facilities sheet.

SECOR RESPONSE
The information requested is provided in Volume II: Report of Design, Sheet B-1 (Watersheds) in Appendix B.

NDEP Response Comment

19) *The NDEP has no further comment*

NDEP COMMENT

3-2 Provide flow calculations as the storm event proceeds and fully contributes, and the affected reach for sizing.

SECOR RESPONSE
The flow calculations are included in Volume II: Report of Design Appendix B (TR-55 output).

NDEP Response Comment

20) *The NDEP has no further comment*

4) Comment - Volume 1 Request for Suspension of Requirements for Groundwater Monitoring and Composite Liner

NDEP COMMENT

4-1 Please include the LandGEM and HELP Modeling in the other portions of the Application in addition to this volume. However please find a review of the respective sections. The Division would also like to clarify the differences between the models used and the current models available. NRRG may either rerun using the current model or make a comparative analysis using the submitted models (some of which have discovered limitations) to the current submittal.

SECOR RESPONSE

The most recent versions of LandGEM and HELP have been used in this amendment to the application. Information has been included for both models where appropriate in the application (Volume I and II) and in the Request for Suspension of the Requirements for Groundwater Monitoring.

NDEP Response Comment

21) *The NDEP has no further comment*

NDEP COMMENT

4-2 Please refrain from restating, in their entirety, the regulations. Merely cite the applicable requirement and provide a response.

SECOR RESPONSE

Where applicable, all restatements of regulations have been removed, and regulations are only cited.

NDEP Response Comment

22) *The NDEP has no further comment*

NDEP COMMENT

4-3 Gas Migration Evaluation Section 7.0 - Please include a discussion in the other portions of the Application related to the amount of gas generated as it relates to the Landfill Gas Analysis, Monitoring and Gas Collection System, by example:

Re-Run the LandGEM Model (using current 3.02 model) using a variety of scenarios (below/above grade, 5k tpd/10k tpd).

i. Develop a maximum gas emission model (conservative).
ii. Establish Monitoring points based upon the physical constraints of the site (reasonable assumptions of gas movement) and the volume of gas produced.
iii. Include a design based upon ii and iii.
iv. Include a sampling protocol for the monitoring program.
v. Note that the LandGEM model only allows 80-year active landfill time frames; Appendix D goes out some 280 iterations? Please clarify the two modeling iterations and include a discussion of how the limitation of the model was addressed.

Please note the LandGEM model provides only an estimate of the volume of gas generated by the landfill and therefore the amount of gas available for migration, not its propensity to migrate, this will be a function of diffusion, convection and to some degree concentration gradients and availability of migration conduits (fractured rock for example). The direction of migration will be controlled by separate mechanisms but primarily the overall construction/development of the landfill and the surrounding media's suitability (i.e. unsaturated soils and/or fractured rock) to gas movement. In any event gas movement downward is highly conservative for the purposes of evaluating the impact to groundwater but not likely applicable in evaluating the movement for purposes of monitoring. Any areas of the landfill unit boundary that signify the potential for movement are generally good candidates for establishing monitoring points meeting the needs of NAC 444.667(2)(b). Please bear in mind the Division views the landfill as a three (3) dimensional unit, accordingly monitoring points must be evaluated within the context of the volume of gas generated, the landfill's overall design, its operating practice and proposed monitoring points.

SECOR RESPONSE

A detailed discussion of landfill gas analysis and gas collection in relation to these comments can be found in Section 5.7 of Volume II: Report of Design. The landfill gas monitoring plan is fully described in Section 5.12.7 of the Report of Design.

NDEP Response Comment

23) *The NDEP has no further comment*

5) Comment - Section 6.2.1.7, HELP Modeling

NDEP COMMENT

General Comment

As noted above the Division would prefer the use of the most current version of the HELP Model, 3.07. Include all inputs, all assumed and/or default values used in the analysis. Portions of the text are inconsistent with the submitted results as noted below. In addition, the modeling of the landfill is too coarse to be of any specific use. Please note the Division will consider the modeling of the site via the HELP Model as only a portion of the information necessary to satisfy a request for a suspension of groundwater monitoring. The Division requires the following should NRRG wish to provide an analysis of the landfill to satisfy this requirement. Please model the site as it is proposed with all design details in place (liners, waste in place, above grade with cap and capped above grade etc). Include complete descriptions of all input and outputs with discussion.

1. Section 6.2.1.8
   Include the sensitivity analysis with the results as a portion of the Application; this may be used later for comparisons.

2. Section 6.2.1.9 Conceptual Model Used in Simulations
   See General Comment above

3. Section 6.2.1.10
   It would also be helpful if the layer properties were tabled in this section.
4. Section 6.2.1.11
   The text is inconsistent with Appendix C. Both profiles refer to a full and somewhat capped simulation. Is the only difference [full and capped] the rainfall? For the first simulation, at layer 4 [Infiltration-Detection] (which is ~1/10" thick?) approximately 3.73 million gallons is available (landfill life?) as free liquid, while the next reported layer is layer eight (8) with zero

liquids. See item 7 below, the compression of the waste may or may not preclude the absorption of liquids within the landfill. Please define the top slope length, bottom slope length, top slope and bottom slope and how the various dimensions were arrived at and their relationship with this design. Unless the waste is completely absorbing this quantity of liquid (it would be well outside of the effect of ET at this depth), it would be by inference going somewhere, please clarify? For the second simulation approximately 15.7 million gallons of liquid is available as free liquid, same general questions as above (also refer to #7 & 8).

5. Section 6.2.1.12
   The value of zero would depend upon where the quantity was evaluated, clearly the model generates a significant amount of leachate over the life of the facility. At this time the Division is not considering alternatives to a liner design other than the prescriptive requirements in NAC 444.681, until NRRG can provide sufficient design detail to consider other than the prescriptive design. As a matter of note should modeling demonstrate significant or primary areas of leakage, the Division would assume this a logical place for installation of a leachate collection system.

6. Appendix C
   Municipal Waste (312 kg/m3) this is approximately 19.5 lb/ft3 (1/3 most assumed values), this is in the lower ½ of the landfill, it is unlikely the waste would be of this specific weight while surcharged with some 500 to 1000 feet of material, please clarify and/or revisit this. Some layers (4, 8 & 11) have exceedingly small thicknesses and/or dimensions; please clarify properties (physical) and purpose of these layers. There are a number of densities provided in the text, please clarify and define where and under what conditions the densities may or may not vary.

7. Summation of Model Output (100 year model timeframe)
   For the 100-year life approximately 3.73 million gallons becomes available (first run) as moisture input into the landfill (leakage through layer 2). The amount of percolation through layer 4 (Inf-Det) is ~3.73 million gallons, despite it being some .12" thick and below the lateral drainage layer, please clarify this. There is no percolation coming from layer 7 (waste)[despite the large surcharge], or through, layers 8 & 9 (layer 8 is .012" thick and 9 is a percolation layer, this seems highly unlikely (there is no dimension to layer 9?). These results do not appear to reflect site conditions or take into consideration the surcharge and concomitant change in field capacity. Please review the summary output as it relates to the proposed design and provide some commentary on the modeled results.

NDEP Summary Comment

The Division's primary concern with respect to the modeling is that it is not reflective of the design nor does it take into consideration the mechanical changes (field capacity, porosity, transmissivity, etc.) the waste undergoes at depth. Once liquids have migrated below a level available to transpiration eventually some portion of these liquids have the potential to move to the bottom of the landfill. Please note that during a review of the landfill settlement section of the Application (Vol. II 5.5), differing densities for the waste, particularly at depth, are submitted or referenced in other sections of the Application. It may be more fruitful to run the HELP model at the conclusion of any arrived-at design, in order to accurately depict the effect the landfill design has on leachate generation.

SECOR RESPONSE

SECOR has conducted the evaluation of leachate potential using Visual HELP version 2.2.0.3 manufactured by Waterloo Hydrogeologic Software Company. Visual HELP combines the latest version of the HELP model (v.3.07) with an easy-to use interface and powerful graphical

features for designing the model and evaluating the modeling results. SECOR has conducted multiple simulations, sensitivity analyses, input evaluations and considerations as discussed above. The findings are presented in the Volume II: Report of Design, Section 5.6.

NDEP Response Comment

24) *The NDEP has no further comment*

6) Comment - Volume 1 Plan of Operations

NDEP COMMENT

6-1 Plan of Operations Section 2.1.1, please identify the type of vehicle that will be using this road, a typical haul truck may be on the order of 20 tons, further, there will be some hundreds of trucks per day based upon the presumed loading rate for the facility. The Division questions whether a dirt road will be sufficient to provide access on a 24 hr-7 day/wk-363 day a year basis, please clarify this section (NAC 444.698 Access; roads).

SECOR RESPONSE

Access to the Landfill site is by all-weather roads previously used by the mine for delivery of equipment and supplies. The access roads are a combination of State Highway 839 (18 miles of paved road) and County (5 miles of gravel road) maintained roads from U.S. Highway 50.

NDEP Response Comment

25) *The NDEP has no further comment*

NDEP COMMENT

6-2 Gas Migration and Response Section 2.1.3, this section refers you to Volume II Closure and Post-Closure Maintenance Plan (which is actually in Appendix E), which in turn (section 5.11) refers you to *Volume I Request for Suspension*…. please clarify this section; it is somewhat confusing. This provides an evaluation of landfill gas and its apparent lack of impact on the groundwater beneath the site. Unfortunately, this is not the intent of the regulation. The regulation states the following:

(a) The concentration of methane gas generated at the unit does not exceed 25 percent of the lower explosive limit for methane in structures, excluding components for any system to control or recover the gas; and

(b) The concentration of methane gas does not exceed the lower explosive limit for methane at the boundary of the unit."

SECOR RESPONSE

A Landfill Gas Monitoring Plan which incorporates these suggestions has been prepared and is contained in Section 5.12.7.2 of Volume II: Report of Design.

NDEP Response Comment

26) *The NDEP has no further comment*

NDEP COMMENT

6-3 There is no strict requirement for evaluation of impacts to groundwater with respect to Landfill Gas (although it may be considered a "pollutant"), merely a monitoring plan to meet the above two criteria. In this case, "unit boundary" may have a somewhat flexible definition. However, it can in general be inferred to be implied as the vertical plane at the limit of the respective landfill unit. In any event please provide a "plan" that complies with these regulations. Include this

evaluation (without the impact to groundwater scenario) as a portion of the Operations Plan for the facility for the active life, closure and post-closure of the site that meets the requirement of *NAC 444.667 Operating criteria: Control of explosive gas. (NRS 444.560)(3) & (5).* The Division recommends some discussion of this prior to the submittal of any plan. There is further comment on the Gas Collection system and the riser pipes in other areas of this Review.

SECOR RESPONSE

The proposed LFG monitoring programs will consist of two separate monitoring systems that will follow the 3-dimensional expansion of the landfill by collection of data from progressively appropriate locations. This is done by incorporating a combination of temporary and permanent monitoring locations and structures. The appropriate location for any monitoring point is continuously evaluated and determined based on the current elevation of fill activities (i.e. as the working elevation advances within the pit) until reaching the ultimate waste footprint; at which time, the permanent monitoring systems will be appropriate.

A Landfill Gas Monitoring Plan has been prepared and is contained in Section 5.12.7.2 of Volume II: Report of Design.

NDEP Response Comment

27) *The NDEP has no further comment*

NDEP COMMENT

6-4 Cover Material Section 2.1.4, and Sheet 2 Volume II Sheets identifies the areas that will comprise the borrow material for the site. Please provide a material balance for the site with the volumes identified for each of the identified source areas to assure there is "… an adequate quantity of earth cover that is workable and compactable and does not contain organic material of a quantity and distribution conducive to harboring and breeding disease vectors." (NAC 444.678(4). For all intermediate layers, daily cover and the final cover, please include the calculations for each. Also, please identify the processing that will be used and the specification of the material (3rd paragraph, final sentence).

SECOR RESPONSE

Section 5.9.3 of Volume II, Report of Design, addresses the issues of availability of cover material. The material requirements and locations are fully discussed in Section 5.9.4. There will be approximately 13.17 million cubic yards of material available for daily cover, liner soils, intermediate cover, and final cover requirements. Additional material can be obtained from KRMC as necessary. The type of processing that may be required is also specified in Section 5.9.3.

NDEP Response Comment

28) *The NDEP has no further comment*

NDEP COMMENT

6-5 Land Use Planning Section 2.1.5, prior to submitting the Permit to Public Notice NRRG must provide proof of ownership in accordance with NAC 444.677(2) for all areas not directly owned by NRRG (and within the landfill boundary). Please forward the transfer of the unpatented claims upon completion.

SECOR RESPONSE

All necessary ownership documentation, specifically the transfer of claims from KRMC to NRRG being processed by the Carson City office of the Bureau of Land Management, will be provided as soon as it becomes available. All necessary proofs of ownership will be provided prior to

commencement of operation of the landfill. NRRG has no objection to this being a permit condition.

NDEP Response Comment

29) *The NDEP will incorporate this in to a compliance item in the permit*

NDEP COMMENT

6-6 Regulatory Approval Section 2.1.7, please remove the 2nd paragraph. The Division reserves the authority to make this determination.

SECOR RESPONSE

Second paragraph in Section 2.1.7 has been removed.

NDEP Response Comment

30) *The NDEP has no further comment*

NDEP COMMENT

6-7 Seismic Impact Zones Section 2.6, the Division's concerns related to compliance with this regulation area contained in other sections of this Review.

SECOR RESPONSE

Response regarding Seismic Impact Zones provided in Volume II: Report of Design, Section 5.7.2.3, Movement and Stress Due to Earthquake Forces.

NDEP Response Comment

31) *The NDEP has no further comment*

NDEP COMMENT

6-8 Unstable Areas Section 2.7, the Division's concerns related to compliance with this regulation are contained in other sections of this Review. As a clarification, there is no section 5.5.1.1 in Volume II. Is this related to Refuse Settlement? Please be aware that the Division will not consider "monitoring" as an engineered measure. The Response also provided inadequate detail with respect to an engineering measure. Please clarify this section. Please revise as requested in this and other sections of this review.

SECOR RESPONSE

Section 5.5.1.1 in Volume II has been corrected to 5.6.1.1.

NDEP Response Comment

32) *The NDEP has no further comment*

NDEP COMMENT

6-9 Proof of Compliance Section 2.8, please remove this entire section as it only relates to the closure of existing (legacy) landfills.

SECOR RESPONSE

Section 2.8 has been removed.

NDEP Response Comment

33) *The NDEP has no further comment*

NDEP COMMENT

6-10 Equipment and Personnel Section 3.1 Equipment and Personnel, please provide the rationale and documentation that was used to determine the necessary equipment.

SECOR RESPONSE

A detailed listing of equipment required and personnel required has been included in Section 3.1, Volume I. The number of vehicles and/or equipment necessary for full scale operation was properly sized and identified through coordinated efforts with Caterpillar and Arata Equipment, using a proprietary software program called Fleetmatch. Fleetmatch is designed specifically for identifying and sizing appropriate equipment at landfills.

NDEP Response Comment

34) *The NDEP has no further comment*

NDEP COMMENT

6-11 Fire Control Program Sections 3.1 & 3.2, please describe the basic fire suppression training. Please include a "Plan of Action" (NAC 444.684(4)), identifying the response to any emergency (only a fire control plan is included). This plan of action should include all instances of an emergency inclusive of injury, medical emergency, slip-trip-falls, etc. This should identify all instances in which the landfill may be subjected to an emergency and an identification of the training (444.684(b)) necessary to provide a suitable response. Please identify the type and location of all emergency equipment inclusive of communication equipment location, arrangements with local emergency personnel *etc.*

SECOR RESPONSE

Emergency fire service, as well as response to other emergencies, will be available from the Mineral County Fire Department. In addition, NRRG has committed to preparing a health and safety plan prior to operation of the landfill (see Sections 18.7, 18.8 and 18.9, Volume I). NRRG has no objection to a permit condition requiring the development of a health and safety plan prior to landfill operation.

NDEP Response Comment

35) *The NDEP will incorporate this into a permit condition*

NDEP COMMENT

6-12 Household and Commercial Waste Section 3.4.1 in general please remove the statement, "…in accordance with all applicable federal, state…" as this is too broad to provide any real detail on how a waste stream or a facility will be managed. If a Permit is issued, the requirements of the Permit will overshadow other requirements. All waste management and operational specifics must be detailed in the Application.

SECOR RESPONSE

"in accordance with all applicable federal, state and local regulations" has been removed.

NDEP Response Comment

36) *The NDEP has no further comment*

NDEP COMMENT

6-13 Yard Waste Section 3.4.3, see above. In general, there are no federal requirements for yard waste.

SECOR RESPONSE

"in accordance with all applicable federal, state and local regulations" has been removed.

NDEP Response Comment

37) *The NDEP has no further comment*

NDEP COMMENT

6-14 C&D Waste Section 3.4.4, either this should be expanded and detailed in order to meet NAC 444.652 Disposal of special wastes: Construction and demolition wastes, (NRS 444.560). Or it should be stated that no C&D waste will be accepted at the site. If it is to be included, it must have waste acceptance criteria associated with it.

SECOR RESPONSE

Section 3.4.4, Volume I has been modified to state that the landfill will not accept construction and demolition debris. Future expansion may involve accepting C&D debris. In the event that this occurs, a permit modification will be requested.

NDEP Response Comment

38) *The NDEP has no further comment*

NDEP COMMENT

6-15 Asbestos Section 3.4.7, see above, in general if asbestos is to be accepted at the facility then state such or remove from the Application. Please remove any reference to federal state or local regulations, state exactly how the material will be accepted within the confines of the Application and include all federal, state and local regulations.

SECOR RESPONSE

Section 3.4.7, Volume I has been modified to state the Landfill will not accept asbestos-containing materials.

NDEP Response Comment

39) *The NDEP has no further comment*

NDEP COMMENT

6-16 Medical Waste Section 3.4.8, the Division cannot approve this disposal practice. A description of the "special waste," a specific waste area and practice (descriptive) that meets NAC 444.646 must be included.

SECOR RESPONSE

Section 3.4.8, Volume I has been revised to state that medical wastes will not be accepted at the Landfill.

NDEP Response Comment

40) *The NDEP has no further comment*

NDEP COMMENT

6-17 Salvageable Recyclable Materials Section 3.4.9, this is unclear, does this mean that recycling will occur, and how will recyclables differ from the wastes acceptable for disposal?

SECOR RESPONSE

Section 3.4.9, Volume I has been revised to state the Landfill will not conduct salvageable, recyclable operations at this time.

NDEP Response Comment

41) *The NDEP has no further comment*

NDEP COMMENT

6-18 Household Hazardous Waste Section 3.4.10, this statement is somewhat conflicting. If the HHW is segregated then there would be no need to dispose of it as "mixed. If disposal of HHW is to take place then a particular process should be identified in the Application? Please note that NRRG has considered taking waste from California. California regulates HHW as a Hazardous Waste (coded and manifested). NRRG should note that waste designated as hazardous in the state of origin is to be managed as a hazardous waste in this state, please refer to NAC 444.843.

SECOR RESPONSE

This section has been revised to state the Landfill will not accept hazardous waste. Household wastes are not considered hazardous waste as long as it is only material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarter, campgrounds, picnic grounds and day-use recreation areas). Only household waste falling under this definition will be accepted at the Landfill. Wastes from household hazardous waste collection programs will not be accepted at the Landfill.

NDEP Response Comment

42) *The NDEP has no further comment*

NDEP COMMENT

6-19 Tires Section 3.4.11, does this mean the tires will be accepted from other sources? And exactly what is a "sole source."

SECOR RESPONSE

Section 3.4.11 has been revised to state the landfill will accept from any and all sources tires that have been cut or shredded prior to acceptance.

NDEP Response Comment

43) *The NDEP has no further comment*

NDEP COMMENT

6-20 Liquid Waste Section 3.4.12, please expand on this and identify the criteria that will be used, i.e. containerized wastes that cannot be opened (bulk containers, etc.), please refer to *NAC 444.692 Disposal of liquids (NRS 444.560)* for specifics.

SECOR RESPONSE

Section 3.4.12, Volume I has been revised to state the Landfill will not accept liquid waste.

NDEP Response Comment

44) *The NDEP has no further comment*

NDEP COMMENT

6-21 Petroleum Contaminated Soils Section 3.4.14, (please correct citation to 3.4.14.2), describe the treatment and include such provisions for the management of this waste as it relates to the movement, storage and ultimate disposal.

SECOR RESPONSE

Section 3.4.10.2, Volume I has been corrected to read Section 3.4.14.2 and to remove the word "treatment". Petroleum-contaminated soil will not be treated. It will be stockpiled, disposed of, or used as landfill cover material.

NDEP Response Comment

45) *The NDEP has no further comment*

NDEP COMMENT

6-22 Personnel Training Section 4.3, please provide specific training details, by example 29 CFR §1910.120 provides training guidelines with included topics for both on the job and classroom environments. Specifically, the training program as required by NAC 444.6665 should address topical criteria for a worker that expresses a comprehensive approach to the identification and subsequent management of Hazardous Waste (both RCRA and TSCA wastes are included) as defined by NRS 459.430.

SECOR RESPONSE

Specific training requirements have been included in Sections 18.7, 18.8 and 18.9 of Volume I, preliminary health and safety plan.

NDEP Response Comment

46) *The NDEP will address this as a condition of permit issuance*

NDEP COMMENT

6-23 Handling Procedures Section 4.5, please define what a "regulated quantity" is. In general, many of the more rural counties depend greatly on a volunteer department. Most training is oriented on the primary mission of fighting fires. Either provide documentation the fire department is willing and able to provide the services described or include a training program for onsite personnel. In either event, the requirements of NAC 444.6665(c)&(d) must be met. Please be aware the 40 CFR §262.34 includes an extensive list of requirements for the management of Hazardous Waste at a RCRA generator site. Please include all the requirements, also please note the accumulation time is related to the quantity of waste generated and shipping distance. Should hazardous waste be generated by NRRG an EPA identification number for either RCRA or TSCA wastes must be obtained, therefore please include both conditions in the Application.

SECOR RESPONSE

The term "regulated quantities of hazardous or PCB wastes" has been revised to read "regulated hazardous or PCB wastes". Thus, the issue of storage of hazardous waste only applies if a hazardous waste was generated on-site. In such a case, NRRG shall comply with applicable Nevada waste generator regulations.

NDEP Response Comment

47) *The NDEP has no further comment*

NDEP COMMENT

6-24 Vector Controls and Response Section 7.2 this section conflicts with Section 2.1.4, please clarify. Please provide detailed design drawings and a description of the drainage control system. Please remove the last sentence.

SECOR RESPONSE

The last sentence of Section 7.2, Volume I has been removed. (Please see 4th paragraph of 2.1.4; this is the conflict.)

NDEP Response Comment

48) *The NDEP has no further comment*

NDEP COMMENT

6-25 Operations and Maintenance Section 8.2, please remove the last sentence.

SECOR RESPONSE

Last sentence in Section 8.2 has been removed.

NDEP Response Comment

49) *The NDEP has no further comment*

NDEP COMMENT

6-26 Section 9.2, clarify that the end of the working day is as defined in Section 2.1.4. Does NRRG plan on using C&D waste as ADC, and how is 4" "material" equivalent to 6" soils? Please provide some clarification of what "well-ground" material…" is and whether it will provide for excessive drainage, particularly encourage drainage in to the underlying waste layers. It is also not described in other sections and not clear whether it is the proposed Tarp or final soil cover? Additionally, section 9.1 conflicts with section 9.2 for the 90-day cover requirement of NAC 444.688; the former states the 12" while the latter states 6", please clarify.

SECOR RESPONSE

Reference to alternative daily cover (ADC) option has been removed. NRRG is not proposing ADC. Sections 9.1 and 9.2 now both refer to 6 inches of cover material.

NDEP Response Comment

50) *The NDEP has no further comment*

NDEP COMMENT

6-27 Section 10.2 Run-on/Run-off

Due to the extensive timeframes for this site, the discussion and controls for the Run-on and Run-off for the facility should be spoken to as the site evolves. For example, run-off controls at the lip of the pit are somewhat meaningless if it takes some 40 years for the landfill to complete to Phase 1. While the Run-on controls may be at the pit crest (to redirect off site waters from accessing the landfill), Run-off controls will only be approved by the Division for controls that follow the disposal of waste as the site matures as required by NAC 444.6885(4).

SECOR RESPONSE

Section 10.2 is now Section 10.1. As shown in the associated drawings for the Above Crest Grading Plan, Pit Bottom Grading Plan, as well as Development Phases I through Phase V (Sheets 5, Sheet 6 and Sheets 8 through 12 respectively, of Volume II: Report of Design), the proposed Landfill construction sequences have considered the issue of run-on/off during each of the presented development phases. This consideration has resulted in the installation of lined and unlined temporary catch basins at the base of each lobe fill and the monolithic pit fill. Sheet flows are promoted by positive drainage patterns across the 90-day cover surfaces to be intersected by the respective basin prior to contacting waste. These basins will be used as containment basins to manage the waters during construction for use in appropriate activities (i.e. dust suppression, etc). In addition, temporary storm water channels will be constructed as necessary to convey storm water to the catch basins within the pit. These channels may or may not require rip/rap protection.

NDEP Response Comment

51) *The NDEP has no further comment*

NDEP COMMENT

6-28 Closure and Post Closure Section 11.0, this section essentially restates the entire text of the regulation, of which the Division is already aware. This is not particularly helpful or necessary as the Division is concerned only with how NRRG plans to comply with the regulation. The Division would also suggest that the Closure/Post-Closure Plan be removed as an appendix and placed as a portion of the Operating Plan (see above). Please remove the last sentence.

SECOR RESPONSE

Section 11.0 has been removed. Discussion of Closure/Post Closure is now contained in Sections 5.12 and 5.13 of Volume II: Report of Design.

NDEP Response Comment

52) *The NDEP has no further comment*

NDEP COMMENT

6-29 Section 11.2/Appendix E Closure/Post-Closure (Section 2), note that this refers to Report of Design Volume II.

SECOR RESPONSE

Section 11.2 has been removed.

NDEP Response Comment

53) *The NDEP has no further comment*

NDEP COMMENT

6-30 Final Cover Elements Section 2.2 (Appendix E), the Division is providing this review based on the supposition that a prescriptive cover liner pursuant to NAC 444.6891(1) is being proposed.

SECOR RESPONSE

Appendix E of Volume II is now incorporated as part of Volume II in Sections 5.12, Closure Plan, and 5.13, Post Closure Maintenance Plan. A Prescriptive Cover with Drainage Layer is proposed for final cover.

NDEP Response Comment

54) *The NDEP has no further comment*

NDEP COMMENT

6-31 Final Cover Design Section 2.2.1, for each of the design elements provide technical support criteria that will enable confirmation via the CQA Plan. Describe all field tests, and how each of the proposed design elements will be met. If there is insufficient borrow material to proceed to the proposed closure the landfill will be permitted only to the extent of the amount of soils available to properly close the facility. In the event of extensive importation of soils, this must be taken into account with respect to the closure costs of the site. Last two sentences; please specify where the specific physical characteristics are located in the Report of Design.

SECOR RESPONSE

Final Cover Design is now Section 5.12.2.1 of Volume II: Report of Design. Final cover design is discussed in several places in Section 5.0 and is discussed in the CQA Plan in Appendix I.

The issue of sufficient borrow material to proceed to proposed closure of the Landfill has been addressed in detail in Section 5.9.3. As shown on the design drawings and as described with the Report of Design, there is a sufficient quantity of all materials available to construct and close the proposed Landfill.

NDEP Response Comment

55) *The NDEP has no further comment*

NDEP COMMENT

6-32 Second Paragraph refers to an Alternate Final Cover (AFC) [while in other areas reference to an ET cover is noted]. It is not clear whether NRRG is requesting an alternative design (see below) or is complying with the prescriptive design required by NAC 444.6891(1). Detail how the entire cap of 518 acres will be tested to meet the 85% proctor and how the 85% meets the prescriptive requirement of 1 x 10-5 cm/s, including the optimum moisture content and the testing that will be involved in meeting this specification (see example below).

SECOR RESPONSE

There is no regulation requiring a specific compaction of the capping soil. The requirements are for a low permeability material with a permeability of less than 10^{-5} cm/sec. This is required as outlined in the construction specifications and CQA manual (see Appendix I).

NDEP Response Comment

56) *The NDEP has no further comment*

NDEP COMMENT

6-33-1 Borrow Source Evaluation Section 2.2.2, remove phrases like, should, will be, anticipated, may etc. Please state the specific technical requirement for each aspect of the design of the final cover, that it will be met by performing a particular action and then verified in such and such a manner. Second paragraph, please submit the CQA Plan. The Division reserves authority to review the submitted design and comment further.

SECOR RESPONSE

Borrow Source Evaluation is now Section 5.12.2.2 of Volume II: Report of Design. All ambiguous phrases such as should, will be, anticipated, may, etc. have been replaced with definitive language. The Construction Specification and CQA Plan for the landfill construction are presented in Appendix I. Final cover design is discussed in several places in Section 5.0 and is discussed in the CQA Plan in Appendix I. Testing will be performed as required in the Construction Specifications and CQA Plan.

NDEP Response Comment

57) *The NDEP has no further comment*

NDEP COMMENT

6-33-2 Third paragraph, Fourth Paragraph, please describe in detail the final cover specifications/test. Here are some references provided for consideration:
http://www.epa.sa.gov.au/pdfs/landfill_construction.pdf
http://www.usace.army.mil/inet/usace-docs/eng-manuals/em1110-1-4011/a-a.pdf
http://www.gaepd.org/Files_PDF/techguide/lpb/swcloguid.pdf

SECOR RESPONSE

Please see the Construction Specifications and CQA Plan presented in Appendix I of Volume II: Report of Design.

NDEP Response Comment

58) *The NDEP has no further comment*

NDEP COMMENT

6-34 Please include (minimum)

1. Technical requirements for the CQA Officer, Personnel and Laboratory
2. Grading, sub-grade criteria
3. 6" drainage layer, include specific details, type of test, number of samples, rejection criteria, borrow tests, confirmation testing etc etc etc.
4. 18" Barrier Layer, include specific details, type of test, number of samples, rejection criteria, scarification, lack of clods, material prohibitions (sieve analysis, lack of rocks & clods) Compaction testing, borrow test, final test, etc.

SECOR RESPONSE

A complete section covering Construction Quality Assurance, including the elements discussed above, in contained in Appendix I of Volume II: Report of Design.

NDEP Response Comment

59) *The NDEP has no further comment*

NDEP COMMENT

6-35 Please include the location of the shear strength properties for surficial stability analyses. For each of the tests define which will be conducted in the field, with method, and which tests will be confirmed via the laboratory.

SECOR RESPONSE

The final Landfill surface will be constructed at an overall slope angle of 3 to 1 (horizontal to vertical) which is the same as the slope angle for the reclaimed mine dumps which have been constructed using similar materials. The required shear strength for the capping material is outlined in the specifications and CQA plan (please refer to Appendix I). The cover stability analyses were performed based on an assumed minimum internal angle of friction of 30 degrees for the capping material. This is a conservative assumption for a material of this type. In addition, the internal angle of friction will be verified during construction as outlined in the specifications and CQA plan as presented in Appendix I.

NDEP Response Comment

60) *The NDEP has no further comment*

NDEP COMMENT

6-36 Fifth Paragraph, how is the 10% sampling frequency relevant and to which component? The Division will not issue a Permit for the facility without the prior submission of a CQA Plan.

SECOR RESPONSE

A CQA Plan has been provided in Appendix I of Volume II: Report of Design.

NDEP Response Comment

61) *The NDEP has no further comment*

NDEP COMMENT

6-37 Sixth Paragraph, There should be sufficient soils available to perform activities during the active life and closure/post closure of the site. Is there a difference in the Volume II, Report of Design

and Volume II Closure and Post closure Maintenance Plan? Please clarify. Some of the previous discussion involves the submission of variously an ET Cover or Alternative final cover. Please provide a specific cover for review with all technical details and necessary narrative for review to the Division. Accordingly, there is insufficient information upon which to approve an alternative design pursuant to NAC 444.6891(2). In order for the Division to approve an alternative design the following general elements must be provided:

- Establish Performance Goals
- Design Concept and Supporting Technical Data
- Site Characterization (suitability of the site to an AFC)
- Modeling of the cover (inclusive of sensitivity analysis)
- CQA Plan

SECOR RESPONSE

A complete material balance has been provided in Tables 9 and 10, Section 5.9 of Volume II: Report of Design. There is no alternative design being proposed. The only proposal is a "prescriptive cover with drainage layer". The specifications are contained in the CQA Plan.

NDEP Response Comment

62) *The NDEP has no further comment*

NDEP COMMENT

6-38 Design Capacity Section 2.4 *(Design Capacity is now Section 5.12.4 of Volume II)*

As most of the sheets are generated in AutoCAD the determination of an accurate volume for both the permitted volume of the landfill (below grade and above grade volumes and the availability of borrow source material can be provided in fairly precise detail. Please provide, in detail:

1. The below grade volume and required borrow material (daily cover, cell development) to complete to Phase I
2. The volume of material necessary to complete the intermediate cap over Phase I
3. The above grade landfill volume and required material (daily cover, cell development) to complete Phase II
4. The volume of material necessary to cap the site
5. A complete accounting of material itemizing the volume/location of each borrow source

SECOR RESPONSE

Sections 5.9.3 (Materials) and 5.9.4 (Sources) of Volume II: Report of Design now provide a complete, comprehensive accounting and summary of all material available (13,167,000 cubic yards) to take the Landfill through construction of the final cap.

NDEP Response Comment

63) *The NDEP has no further comment*

NDEP COMMENT

6-39 Section 2.7.1, Landfill Gas Monitoring, this section refers to multiple forms of monitoring. Without the submission of specific criteria a "statement" of monitoring has little value, while it may be advisable to incorporate this into the site health and safety program it likely should be removed from the landfill permit Application. If it is to remain please include applicable exposure limits:

SECOR RESPONSE

A gas monitoring system has been developed and is contained in Section 5.12.7.1 of Volume II: Report of Design (formerly 2.7.1 of Appendix E, Report of Design).

NDEP Response Comment

64) *The NDEP has no further comment*

NDEP COMMENT

6-40 Carbon Dioxide Monitoring- OSHA regulates the concentration in the workplace for exposure CO2:
OSHA Permissible Exposure Limits
Final Rule Limits: 10,000 ppm Time Weighted Average (TWA),
30,000 ppm Short-term Exposure Limit (STEL)
Transitional Limit: 5,000 ppm TWA

Oxygen Monitoring – OSHA also regulates workplace safety with respect to oxygen deficiencies, "…areas with oxygen content below 19.5 % are considered "oxygen deficient"… See above for recommendation.

SECOR RESPONSE

A gas monitoring system has been developed and is contained in Section 5.12.7.1 of Volume II: Report of Design (formerly 2.7.1 of Appendix E, Report of Design).

NDEP Response Comment

65) *The NDEP has no further comment*

NDEP COMMENT

6-41 Methane Monitoring, the limits for methane are found at NAC 444.667 Operating criteria: Control of explosive gas. (NRS 444.560). In particular there are two requirements:

1. The concentration of methane gas generated at the unit does not exceed 25 percent of the lower explosive limit for methane in structures, excluding components for any system to control or recover the gas; and
2. The concentration of methane gas does not exceed the lower explosive limit for methane at the boundary of the unit.

SECOR RESPONSE

A gas monitoring system has been developed and is contained in Section 5.12.7.1 of Volume II: Report of Design (formerly 2.7.1 of Appendix E, Report of Design).

NDEP Response Comment

66) *The NDEP has no further comment*

NDEP COMMENT

6-42 In this context, NRRG shall establish a set monitoring system, well described. This may be done either at the landfill boundary inside and outside of the pit (for the purposes of satisfying this regulation the boundary of the unit will be established at the "vertical edge" of the landfill(s)). At fixed points or it may be established inside and outside of the pit via portable (please correct spelling 3rd paragraph 7th word) handheld metering, (note all structures onsite will be monitored). Second paragraph, this contains a variety of monitoring. Please clarify this to refer to specifics, provide a map that shows the locations for both fixed and mobile monitoring. In any event please include a monitoring program, response action plan and locations. As a matter of note, the reference to Volume I refers you to Volume II.

SECOR RESPONSE

A gas monitoring system has been developed and is contained in Section 5.12.7.1 of Volume II: Report of Design (formerly 2.7.1 of Appendix E, Report of Design).

NDEP Response Comment

67) *The NDEP has no further comment*

NDEP COMMENT

6-43 Landfill Gas Collection System Design Section 2.7.2.1 *(now Section 5.12.8 of Volume II)*

How was the deformation analysis accomplished? Please include the calculations and the factor of safety and how was it derived? The Division is requesting a seismic stability analysis for the above-grade portion of the landfill. Regardless of whether the cover can withstand a given pressure it will still maintain a buoyed weight (gas pressure), affecting the stability of the slope in a seismic event. Please include this "lifting" force when analyzing for cover slope for stability. Please include an analysis of suitable pipe strength due to the ~500 feet of overburden, inclusive of deformation of the piping system due to the settlement of the above-grade waste surcharge (figure D-2 shows some 200 ft). This amount of settlement may or may not occur as once the waste reaches the pit lip and the intermediate layer is applied, most of the settlement (lower ½) will have taken place. However, further settlement will occur due to the above-grade surcharge (deformation/displacement/crushing).

SECOR RESPONSE

The stability analyses of the Landfill mass and cap is presented in Section 5.0 of Volume II: Report of Design. Gas pressure, earthquake loading, and seepage forces were included as part of our analyses and design. The loading on the horizontal gas collection pipes was also considered in our analyses and design.

NDEP Response Comment

68) *The NDEP has no further comment*

NDEP COMMENT

6-44 Gas Generation Pipeline Design for Intermediate Cover Layer Section 2.7.2.2

The Division is unfamiliar with this particular approach for estimation of pipe spacing for Landfill Gas Collection. Please provide Crane Technical Paper No 410 for review. As a matter of note, the equation does not include a variable for establishing the spacing, the spacing is input and diameter of pipe is determined (depth of waste does not come into play in this analysis). Given that this system is presented as a passive design (at closure), the Division is questioning the approach that gasses generated from the older (deeper) areas of the landfill will be recovered with this design or that the gasses will migrate in such a well-mannered way. Please expand on this approach and include some evaluation of how the internal pressure in the landfill will promote the movement of gas to the vertical risers. Also, please provide the calculations justifying the spacing of the vertical risers as well as the horizontal piping.

SECOR RESPONSE

The landfill gas collection and removal system was analyzed and designed based on the "Landfill Gas Pressure Relief Layer – Design Calculator" as presented on the website landfilldesign.com. Please refer to Section 5.7 of the Volume II: Report of Design for details on our analyses and design. The Crane method was not used for our updated design presented with this submittal. The spacing for the surface vents was chosen based on experience at similar sites. An extensive literature search involving numerous data bases was performed. In addition, we contacted several leading researchers involved with gas collection at landfills. The final conclusion was that there is no currently acceptable method to evaluate a passive vent system for landfill gas and that all passive systems have been designed based on experience.

The venting system for the final cover that has been designed for the Landfill is quite flexible in that additional vents can be added if needed and it can be adapted to perform as an active system involving vacuum pumps.

NDEP Response Comment

69) *The NDEP has no further comment*

NDEP COMMENT

6-45 Gas Generation Venting Design for Final Cover Section 2.7.2.3

This section refers to calculations in appendix D., however the calculations included only seem to refer to the 500 foot depth of refuse submitted for the intermediate layer. Please clarify. Also, there will be substantial settlement of the cover (referred to in other sections) that may compromise the cover stability and the ability of the gas relief system to perform as presented. Please expand on this section to capture some of the potential problems.

SECOR RESPONSE

There are two basic gas collection systems - one below the intermediate cover/liner, and one below the final cover. The one below the intermediate liner/cover will vent gas to the vertical riser pipes. The one below the final cover will vent out the surface vents. Both systems are shown on the design drawings and described within the Volume II: Report of Design.

The landfill gas collection systems and final slopes have been designed to accommodate settlement of refuse. The settlement of the refuse actually improves stability of the cover and waste mass since as the waste consolidates the slopes become flatter. Please refer to Section 5.0 of the Volume II: Report of Design for a full description of the analyses and design.

NDEP Response Comment

70) *The NDEP has no further comment*

7) Comment - Volume 2, Report of Design

General Comments

NDEP COMMENT

7-1 Base Liners Section 5.2.4.1

The Division has commented on this previously. No relief from the liner requirements is contained within the regulations.

SECOR RESPONSE

The design submitted to NDEP does have a liner system that addresses the control of fluids in a manner protective of the waters of the State. The liner system for the landfill consists of fine grained soils which will be compacted to form a low permeability barrier to inhibit leachate migration. Grading will be performed in a manner which directs any leachate to collection sumps where it can be monitored and removed if present. See Section 5.2.5.1, Volume II: Report of Design.

NRRG and current NDEP regulations require SECOR to use standards of care consistent with sound engineering principles to design the Landfill in a manner that will not impact the environment. The resulting design has integrated local conditions (e.g. competent rock formations and depth to groundwater exceeding 1,500 feet) with a compacted low permeability

soil liner, and engineering controls (e.g. sumps for detection of leachate and removal if present and horizontal liner material) which support a site that meets the performance standards of care for protection of waters of the State.

NRRG recognizes that the operation of a landfill for a period of 60 to 120 years presents certain challenges, including the potential of change to engineering standards or landfill regulations over such a period. However, this landfill is not precedence-setting in this regard in Nevada as other landfills have been permitted for similar or longer periods (i.e., the Crestline landfill application identified a projected life of 60 to 400 years and the City of Fallon landfill has a projected life of 104 years).

The Landfill has below natural grade and near natural grade components (within and above the crest of the existing closed mine pits) where the time frame for completion of the below ground portion is 23 years or greater. The transition between the below and above configurations offers an opportunity to examine the effectiveness of the engineering controls in place in relation to the projected and calculated parameters that went into the design verses observations and measurements of the effectiveness of the design under performance conditions. Such observations include actual leachate generation rates versus HELP modeling projections and actual gas generation rates versus LandGEM modeling). This will give NRRG and the NDEP the opportunity to adjust the design of the upper portions and or operations of the landfill based on real data. To this end, NRRG proposes to develop an evaluation program, possibly to include a pilot landfill, that would assess and measure critical assumptions and engineering controls (e.g., cover infiltration, leachate production, porosity of waste and rock, and gas production) to be used to adjust the landfill design of the upper portions.

NRRG proposes that this evaluation program be developed in the intervening period between this application re-submittal and the commencement of operations. NRRG suggests that the evaluation system program be developed cooperatively and in conjunction with NDEP, NRRG and Bill Albright, Ph.D. of the Desert Research Institute of Reno, Nevada. Dr. Albright has spent considerable time conducting field studies at landfills throughout the county to determine performance characteristics as predicted versus as measured in the field. His education includes:

***Bill Albright, Ph.D**.*
EDUCATION:

Ph.D., Hydrogeology, University of Nevada, Reno
Dissertation Title: Field Water Balance of Landfill Final Covers, 2005

M.S., Hydrology/Hydrogeology, University of Nevada, Reno
Thesis Title: Physical and Hydrologic Characteristics of an Amended Soil Proposed as a Low Permeability Component of a Radioactive Waste Landfill Cover, 1996

NDEP Response Comment

71) *The NDEP has no further comment*

NDEP COMMENT

7-2 Drainage Section 5.2.4.2

Please include the drainage design for the bottom of the pit that shows and details the contouring of the bottom of the pit to induce what leachate is produced migrates to the collection system.

SECOR RESPONSE

The drainage design is shown in great detail on Sheet 5, Volume II: Report of Design.

NDEP Response Comment

72) *The NDEP has commented on this previously*

NDEP COMMENT

7-3 Final Cover Section 5.2.4.3

Please provide additional detail regarding the design of the final cover. In other portions of the Application, the cover is also referred to as an ET cap or a prescriptive cap, which differ from supplied details (# 9 sheet 9). Please note that these are fundamentally differing designs. This section also refers to an 18"clay layer which is not described fully or anywhere else is it detailed in the Application. Please include a QA/QC Plan for the cap that enables a review by the Division inclusive of the sampling necessary to meet the 95% modified proctor criteria. A single and final cap design must be detailed in the Application and sufficient information supplied upon which the Division can conduct a review; include for example the following information:

Specific Layer descriptions with technical details and engineering specifications

- ♦ Vegetation
- ♦ Type (placement, density [as a soil loss preventative] and species
- ♦ Vegetative Support Layer
- ♦ Soil type
- ♦ Particle size and distribution
- ♦ Confirmation of design [CQA, QA/QC Plan] etc etc.

SECOR RESPONSE

The final cover is a "prescriptive cover with drainage layer", and is described in Section 5.0, Volume II: Report of Design. The CQA Plan is contained in Appendix I.

NDEP Response Comment

73) *The NDEP has no further comment*

NDEP COMMENT

7-4 Proposed Slope Geometry and Drainage Section 5.3.1

Please provide the version of the software used (Slide 5 is the latest). The output in appendix D does not appear to resemble any of the outputs from the program also please include the complete output from the file. Also please note that the modeled profile is approximately 900 feet in height, while NRRG has proposed an above grade design of ~500-feet. Please explain how the modeling reflects the proposed design. For the use of the Slide program, please include <u>all</u> inputted material properties, assumptions, geometry and seismic criteria; and explain the use of the vertical seismic load included in the analysis. Also, please include conclusions, sample calculations, and recommendations that can be reviewed within the context of the design.

SECOR RESPONSE

Version 5.021 of SLIDE was utilized and details are provided in Appendix E – Models Used for the Design of the Rawhide Landfill. Please refer to Section 5.7.2.3 of Volume II: Report of Design. Model input and output is contained in Appendix E.

NDEP Response Comment

74) *The NDEP has no further comment*

8) Comment -Volume II, Report of Design ~ Sheets

NDEP COMMENT
General Comments

8-1 Please provide a final design sheet showing, a complete picture of the site as it would be at this stage of development; all access roads into/onto the landfill, all Run-on/off controls, all risers, fencing, all support buildings.

8-2 Please correct the spelling errors and mis-numbering of the project # in the Title Blocks, particularly Sheet 9.

8-3 Please confirm that all drawings are consistent with the text in the Volumes, and all noted design details are included in the drawings.

8-4 In some cases the scale of the drawings is large enough to lose detail, for those items on the sheet, please consider bubbling and providing greater detail.

8-5 For each of the "phases," please include the same number of cross sections as put forward for the final design at closure.

8-6 Please include a sheet that identifies the watersheds in conjunction with the run-on controls.

SECOR RESPONSE
Corrections made as requested.

NDEP Response Comment

75) *The NDEP has no further comment*

9) Comment - Specific Comments by Volume II-Sheets

NDEP COMMENT

9-1 Sheet 2 for each of the identified borrow source areas please provide the available volume material for the landfill.

SECOR RESPONSE
Sheet 2 is now Sheet 4, Sample and Borrow Locations. All borrow source areas have been identified and volumes of materials provided.

NDEP Response Comment

76) *The NDEP has no further comment*

NDEP COMMENT

9-2 Sheet 3- the supporting calculations for the design of the Run-on and Run-off system are included in the Request for Suspension of Groundwater Monitoring. The Division would suggest this be placed in the Operations Volumes for the site. These will be maintained for some time and likely see modification as the site proceeds through its operational life.

SECOR RESPONSE
The supporting calculations for the design of the run-on and run-off systems are included in Section 5.14, Surface Water Management, of Volume II: Report of Design and in Appendix B, TR-55 Output.

NDEP Response Comment

77) *The NDEP has no further comment*

NDEP COMMENT

9-3 Run-on Controls
Please provide a contributing watershed area for each of the reaches in conjunction with just the Run-on control ditches.

SECOR RESPONSE
Please refer to Figure 5, Contributing Watersheds to Run-On Drainage (located behind the Figures tab in Volume II: Report of Design); Sheet 3, Site Infrastructure Map; and Sheet 15, Phase VII Final Cover Plan.

NDEP Response Comment

78) *The NDEP has no further comment*

NDEP COMMENT

9-4 Run-off Controls- there are no Detention basins for the landfill either at closure or during the active life. Please clarify how waters that fall within the pit are to be controlled.

SECOR RESPONSE
Please see discussion of run-off controls at closure in Section 5.14.3.3 of Volume II: Report of Design. Section 5.1.4.3.2 of Volume II: Report of Design contains discussion of run-off controls during filling. In addition, see Appendix B.

NDEP Response Comment

79) *The NDEP has no further comment*

NDEP COMMENT

9-5 As figure B-1 Watersheds TR-55 Output phases 1 and 2 Appendix B Volume II shows the contributing areas, it would be helpful to combine the two sheets.

SECOR RESPONSE
Figure 5, Contributing Watersheds to Run-On Drainage (located behind the Figures tab in Volume II: Report of Design) now shows all the subareas.

NDEP Response Comment

80) *The NDEP has no further comment*

NDEP COMMENT

9-6 Sheet 4-Initial Grading Plan, It is not clear what this sheet is signifying. Does NRRG propose to grade the entire area prior to operations and relocate all of the borrow material? The two vertical risers that are shown (SE corner & NW corner) do not show up in other sheets and particularly in the final grading plan and are not described in Volumes 1 or 2; please clarify.

SECOR RESPONSE
The Initial Grading Plan sheet has been removed. NRRG does not propose to grade the entire area prior to operations and relocate all the borrow material. Grading follows the phasing plan as detailed in Volume II: Report of Design, Section 5.0, Landfill Design. The vertical risers are now on the final configuration (see Section 5.7.2 and Sheet 15).

NDEP Response Comment

81) *The NDEP has no further comment*

NDEP COMMENT

9-7 Sheet 5- Phase 1 Development, this is in some conflict with the narrative. The drainage for the site shows a flat surface with a 5% drainage without run-off controls located please clarify what this sheet is showing. Please show a complete picture of the site as it would be at this stage of development; access roads into/onto the landfill, Run-on/off controls (particularly detention basins for both run-on/off), risers; please include a N-S, E-W elevation slice.

SECOR RESPONSE

The channel across Phase V (Sheet 13) is discussed in Section 5.14.3.2 of Volume II: Report of Design. Run-off is directed to the interior drainage channel (Sheet 3) and is discharged to the south sediment pond (Sheet 3).

NDEP Response Comment

82) *The NDEP has no further comment*

NDEP COMMENT

9-8 Sheet 6- Intermediate Gas Collection System, the Note to the Grutt Pit is incomplete, seems to state HDPE but the detail says SS304; please clarify. Please include details for all the connections on the detail sheet.

SECOR RESPONSE

Details for all the connections are shown on Sheet 18. Sheet 12 – Gas Collection Plan has been modified.

NDEP Response Comment

83) *The NDEP has no further comment*

NDEP COMMENT

9-9 Sheet 7 - Phase II Development, the drainage pattern shown seems improbable; drainage across the site will be working from west to east as sheet flow, and not necessarily follow the arrows. How does this interact with the Level 3 development picture shown on Figure 11? Will this drainage pattern be maintained throughout this stage of development? Please show a complete picture of the site as it would be at this stage of development; access roads into/onto the landfill, Run-on/off controls, risers, and include a N-S, E-W elevation slice.

SECOR RESPONSE

Please see all Phases of development – Sheets 8, 9, 10, 11, 13, 14 and 15, for Phases I, II, III, IV, V, VI, and VII included in Volume II: Report of Design.

NDEP COMMENT

9-10 Sheet 8- Final Bench Grading Plan, What is the Blue line signifying (boundary?) Please provide the drainage pattern for the top deck. It is shown as flat (should have a 3% grade). Note that the risers shown on earlier sheets are no longer showing up on this sheet; please clarify. Please provide a N-S Section Elevation. Please correct the Project number. Please consider that the location of all the gas risers may need to be included as a coordinate table. How is all run off being directed to the down chutes?

SECOR RESPONSE

Sheet 15, Final Cover Plan, shows grade, shows vertical risers; East-West and North-South elevation slices are shown on Sheets 16 and 17, respectively. The blue line has been removed. For everything that pierces the cap, there is a GCL cutoff, as shown on Sheets 18 and 19, Details and Sections. The exact location of the riser pipes will be determined during construction. At that time, the location of the center of the pipes will be submitted. A Vertical Riser Pipe Maintenance Plan is contained in Appendix F of Volume II: Report of Design.

NDEP COMMENT

9-11 Sheet 9- Details and Sections (*now Sheet 18)*

NDEP COMMENT

9-11.1 Detail 3 - please include road and sub-grade specifications sufficient to withstand the expected vehicular traffic.

SECOR RESPONSE

Please see Detail 9, Sheet 18, Volume II: Report of Design.

NDEP COMMENT

9-11-2 Detail 4 - see comment elsewhere.

SECOR RESPONSE

Unknown reference by NDEP

NDEP Response Comment

84) *The NDEP has no further comment*

NDEP COMMENT

9-11-2 Detail 5 - is there some allowance for preventing drainage between the settlement marker, and in point of fact the vertical risers or anything else piercing the cap, and the surrounding soil to prevent the infiltration of moisture? These are also not identified in the closure/post-closure plan. Is there some surveying protocol that will be used to determine whether excessive settlement has taken place, and what would be the response action, for example include an initial survey to establish a baseline and some action that would take place at >2" of settlement, etc.

SECOR RESPONSE

All penetrations of the final cap are now constructed with a GCL boot to prevent drainage between the soil and the penetrating item. These are shown on details 5 and 10 on sheet 18 for the vertical riser pipes and settlement monuments respectively, and on detail 17 on sheet 19 for the gas vents. This is addressed in the closure/post-closure plan in that the cap will be constructed as shown on the design drawings and described in the specifications.

Monitoring of settlement is discussed in Section 5.13.2.3 Landfill Settlement Monitoring program. The following text outlines the actions to be taken:

"The settlement monuments should be surveyed on an annual basis or more frequently if movement is occurring at the rate of 1-inch per month or greater. The monitoring reports should be evaluated by a qualified engineer as they become available. Movement with a substantial horizontal component should be examined in the field to determine if it is due to compression settlement of the MSW or a slope stability issue. If it is determined that there is a slope stability

problem it would require corrective measures similar to those outlined in the pit slope monitoring plan (Appendix H). If it is determined that most of the movement is vertical and due to compression of the MSW and as long as the drainage of the cap is not impacted no action may be required. If drainage or the integrity of the cap is impacted corrective measures such as filling, re-grading, topsoil placement and or reseeding may be would be necessary."

NDEP Response Comment

85) *The NDEP has no further comment*

NDEP COMMENT

9-11.4 In Details 6 and 8 where the drainage layer is shown, is there planned to be placement of a water barrier to prevent any movement downward of stormwaters (apparently between the foundation layer [daily cover]) and the barrier layer?

SECOR RESPONSE

These details have been changed. Please refer to details 8 and 9 on sheet 18. The drainage layer in the cap now terminates at the bottom of each 75 foot bench. A 4-inch diameter perforated pipe will be installed in the low point of the drainage layer on each bench and will convey seepage to the down routes. In addition these pipes could be connected to vacuum system to remove landfill gas using an active system.

NDEP Response Comment

86) *The NDEP has no further comment*

NDEP COMMENT

9-11-5 Detail 12 - this refers to an ET Cover system; please clarify if an ET system is to be used (see above).

SECOR RESPONSE

Detail 12, Road Crossing Side Slope, is now Detail 21 on Sheet 19, Volume II: Report of Design. Reference to ET Cover has been corrected to Final Cover System.

NDEP Response Comment

87) *The NDEP has no further comment*

NDEP COMMENT

9-11-6 Detail 14 - the note spec is not reflected in the narrative for the risers. Please update and include as a detail.

SECOR RESPONSE

The note on Detail 15 (formerly Detail 14), "Intermediate cover at crest of pit must slope at 5% away from risers", has been added to the narrative in Section 5.7.2.1 under Vertical Riser Pipe Design, Volume II, Report of Design.

NDEP Response Comment

88) *The NDEP has no further comment*

NDEP COMMENT

9-11-7 Detail 18 - this is the detail for the gas monitoring wells. No locations have been included; in addition, the Division will need a QA/QC plan for installation and a sampling protocol for the Gas Monitoring System. Where will these be installed?

SECOR RESPONSE
Now shown as Detail 19 on Sheet 19, Volume II: Report of Design. Proposed locations for the gas monitoring wells as landfill filling proceeds are shown on Sheet 7, Borrow Sources Final Grading Plan (see NOTE). A QA/QC plan for installation and a sampling protocol for the Gas Monitoring are included with the Gas Monitoring Plan in Section 5.12.7.1 of Volume II: Report of Design.

NDEP Response Comment

89) *The NDEP has no further comment*